

CONTAINS NO CBI



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EPA-OTS



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90-890000632

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Comprehensive Assessment Information Rule
REPORTING FORM

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When completed, send this form to:

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U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

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Control Number: _____

Docket Number: _____

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [0][6] [7][4] [8][9]
CBI mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. [0][0][0][5][8][4]-[8][4]-[9]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule Toluene-2,4-Diisocyanate

(ii) Name of mixture as listed in the rule N/A

(iii) Trade name as listed in the rule STEPANFORM-C-608-T

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule N/A

CAS No. of chemical substance N/A [][][][][][]-[][]-[][]

Name of chemical substance N/A

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer 1

☐ Importer 2

Processor 3

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI
☐ Yes ☒ Go to question 1.04
☐ No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI
☐ Yes 1
☐ No ②

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) N/A
N/A

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI
☐ Trade name N/A
☐ Is the trade name product a mixture? Circle the appropriate response.
Yes N/A 1
No N/A 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI
☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

<u>P. Joe Jansen</u> NAME	<u>P. Jansen</u> SIGNATURE	<u>9/11/89</u> DATE SIGNED
<u>Director OSHEC</u> TITLE	<u>(314) 232 - 8948</u> TELEPHONE NO.	

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You CBI ☐ are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

<u>N/A</u> NAME	<u>N/A</u> SIGNATURE	<u>N/A</u> DATE SIGNED
<u>N/A</u> TITLE	() <u>N/A</u> TELEPHONE NO.	<u>N/A</u> DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI ☐ "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

<u>N/A</u> NAME	<u>N/A</u> SIGNATURE	<u>N/A</u> DATE SIGNED
<u>N/A</u> TITLE	() <u>N/A</u> TELEPHONE NO.	

☐ Mark (X) this box if you attach a continuation sheet.

1.09 Facility Identification

Dun & Bradstreet Number[1][8]-[7][6][7]-[1][5][3][2]
EPA ID NumberM.O.D.[0][7][5][8][8][8][4][8][7]
Employer ID Number4..[3][0][4][0][0][6][7][4]
Primary Standard Industrial Classification (SIC) Code[3][7][6][1]
Other SIC Code[3][7][6][4]
Other SIC Code[3][7][6][9]

Dun & Bradstreet Number(0)(0)-(6)(2)(6)-(5)(9)(4)(6)

Employer ID Number4.(3)(0)(4)(0)(0)(6)(2)(4)

6

CBI Name M C D O N N E L L D O U G L A S C O R P O R A
+ L O N
[] Address [P O B O X 5 7 6 Street
City
State Zip
Dun & Bradstreet Number [00]-[626]-[3946]

[illegible]

1.13 This reporting year is from $\begin{bmatrix} \overline{0} \end{bmatrix} \begin{bmatrix} \overline{7} \end{bmatrix}$ $\begin{bmatrix} \overline{8} \end{bmatrix} \begin{bmatrix} \overline{8} \end{bmatrix}$ to $\begin{bmatrix} \overline{1} \end{bmatrix} \begin{bmatrix} \overline{2} \end{bmatrix}$ $\begin{bmatrix} \overline{8} \end{bmatrix} \begin{bmatrix} \overline{8} \end{bmatrix}$
Mo. Year Mo. Year

7

N/A

[illegible][illegible]

 --
State Zip

Employer ID Number() () () () () () () ()

Date of Sale () () () () () ()
Mo. Day Year

[illegible]

Telephone Number() () () -() () () -() () () ()

N/A.

[illegible]

City

 --
State Zip

Employer ID Number() () () () () () () ()

Date of Purchase [] [] [] [] [] []
Mo. Day Year

Contact Person []

Telephone Number() () () -() () () -() () ()

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐

Classification

Quantity (kg/yr)

Manufactured	<u>0</u>
Imported	<u>0</u>
Processed (include quantity repackaged)	<u>171 Kg</u>

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year	<u>N/A</u>
For on-site use or processing	<u>N/A</u>
For direct commercial distribution (including export)	<u>N/A</u>
In storage at the end of the reporting year	<u>N/A</u>

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year	<u>67 Kg</u>
Processed as a reactant (chemical producer)	<u>0</u>
Processed as a formulation component (mixture producer)	<u>0</u>
Processed as an article component (article producer)	<u>171 Kg</u>
Repackaged (including export)	<u>0</u>
In storage at the end of the reporting year	<u>136 Kg</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

- 1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

☐

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
<u>TOLUENE-2,4-DIISOCYANATE</u>	<u>STEPAN CHEMICAL CO.</u>	<u>94%</u>
<u>POLYALL</u>	<u>STEPAN CHEMICAL CO.</u>	<u>6%</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u>Total</u>		<u>100%</u>

☐ Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

<input type="checkbox"/>	Year ending	[1][2]	[8][7]	
		Mo.	Year	
	Quantity manufactured	0		kg
	Quantity imported	0		kg
	Quantity processed	219		kg
	Year ending	[1][2]	[8][6]	
		Mo.	Year	
	Quantity manufactured	0		kg
	Quantity imported	0		kg
	Quantity processed	80		kg
	Year ending	[1][2]	[8][5]	
		Mo.	Year	
	Quantity manufactured	0		kg
	Quantity imported	0		kg
	Quantity processed	95		kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

<input type="checkbox"/>	Continuous process	1
	Semicontinuous process	2
	Batch process	3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

☐

Continuous process 1

Semicontinuous process 2

Batch process 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

CBI

☐

Manufacturing capacity NA kg/yr

Processing capacity NA kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

CBI

☐

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Amount of decrease	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Plan to stay about the same

☐ Mark (X) this box if you attach a continuation sheet.

- 2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

	<u>Days/Year</u>	<u>Average Hours/Day</u>
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	<u>0</u>	<u>0</u>
Processed	<u>58</u>	<u>4</u>
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	<u>0</u>	<u>0</u>
Processed	<u>36</u>	<u>4</u>
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	<u>0</u>	<u>0</u>
Processed	<u>0</u>	<u>0</u>

- 2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory	<u>N/A</u>	kg
Average monthly inventory	<u>N/A</u>	kg

☐ Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify \pm % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
<u>UK</u>	<u>POLYALK</u>	<u>C</u>	<u>6 %</u>	<u>STEPAN CHEMICAL CO</u>

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
<u>L</u>	<u>100</u>	<u>100</u>	<u>H</u>

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>GOVERNMENT</u>

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
<u>L</u>	<u>100</u>	<u>100</u>	<u>H</u>

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>GOVERNMENT</u>

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
<u>L</u>	<u>F4</u>	<u>0</u> ^①	<u>H</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>GOVERNMENT</u>

① Analysis shows that 99.99 % of the Toluene Diisocyanate is used up during this process and is no longer identifiable. We therefore will refer to residuals as 0 throughout this report.

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

☐ Truck N/A
Railcar
Barge, Vessel
Pipeline
Plane
Other (specify) NONE SHIPPED TO CUSTOMERS
↓

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
or prepared by your customers during the reporting year for use under each category
CBI of end use listed (i-iv).

☐ Category of End Use

i. Industrial Products

Chemical or mixture N/A kg/yr

Article N/A kg/yr

ii. Commercial Products

Chemical or mixture 0 kg/yr

Article 0 kg/yr

iii. Consumer Products

Chemical or mixture N/A kg/yr

Article N/A kg/yr

iv. Other

Distribution (excluding export) 0 kg/yr

Export 0 kg/yr

Quantity of substance consumed as reactant 0 kg/yr

Unknown customer uses 0 kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

☐

Source of Supply

Quantity
(kg)

Average Price
(\$/kg)

The listed substance was manufactured on-site.

0

0

The listed substance was transferred from a different company site.

0

0

The listed substance was purchased directly from a manufacturer or importer.

285

\$26/kg

The listed substance was purchased from a distributor or repackager.

0

0

The listed substance was purchased from a mixture producer.

0

0

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

☐

Truck ①

Railcar 2

Barge, Vessel 3

Pipeline 4

Plane 5

Other (specify) 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.

CBI

☐

Bags 1
Boxes 2
Free standing tank cylinders 3
Tank rail cars 4
Hopper cars 5
Tank trucks 6
Hopper trucks 7
Drums 8
Pipeline 9
Other (specify) 5 Gal Can (10)

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders N/A mmHg
Tank rail cars N/A mmHg
Tank trucks N/A mmHg

☐ Mark (X) this box if you attach a continuation sheet.

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify \pm % precision)</u>	<u>Amount Processed (kg/yr)</u>
STEPANFOAM-C-608-T	STEPAN CHEMICAL CO.	94%	171

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PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify ± % precision)
Class I chemical	171	94 %
Class II chemical	N/A	N/A
Polymer		

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

☐ CBI

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>N/A</u> % purity	<u>N/A</u> % purity	<u>94</u> % purity
Technical grade #2	<u>↓</u> % purity	<u>↓</u> % purity	<u>N/A</u> % purity
Technical grade #3	<u>↓</u> % purity	<u>↓</u> % purity	<u>N/A</u> % purity

NOTE: WE ONLY USE ONE PRODUCT FOR THIS PROCESS

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ... AFTER APPENDIX I (1)

No (2)

Indicate whether the MSDS was developed by your company or by a different source.

Your company (1)

Another source (2)

NOTE: Please note that our most recent MSDS shows a different formulation than the one we worked to during the reporting year. THESE CAIR DATA ARE BASED ON THE 1988 MSDS

☒ Mark (X) this box if you attach a continuation sheet.

MSDS ATTACHMENTS

- 4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes AFTER APPENDIX I (1)
No 2

- 4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	(5)
Store	1	2	(3)	4	5
Dispose	1	2	(3)	4	(5)
Transport	1	2	3	4	5

☒ Mark (X) this box if you attach a continuation sheet.

- 4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns						
	5 to <10 microns						
Powder	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Fiber	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Aerosol	<1 micron						
	1 to <5 microns						
	5 to <10 microns	↓	↓	↓	↓	↓	↓

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) UK (1/M cm) at UK nm
 Reaction quantum yield, ϕ UK at UK nm
 Direct photolysis rate constant, k_p , at ... UK 1/hr UK latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} UK 1/M hr
 For RO_2 (peroxy radical), k_{ox} UK 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... UK 1/hr
 Specify culture UK

e. Hydrolysis rate constants:

For base-promoted process, k_b UK 1/M hr
 For acid-promoted process, k_a UK 1/M hr
 For neutral process, k_n UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	<u>UK</u>
Atmosphere	<u>UK</u>
Surface water	<u>UK</u>
Soil	<u>UK</u>

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>		<u>Media</u>
<u>584-84-9</u>	<u>UK</u>	<u>UK</u>	in	<u>UK</u>
<u>N/A</u>	<u>↓</u>	<u>↓</u>	in	<u>↓</u>
<u>↓</u>	<u>↓</u>	<u>↓</u>	in	<u>↓</u>
<u>↓</u>	<u>↓</u>	<u>↓</u>	in	<u>↓</u>

5.03 Specify the octanol-water partition coefficient, K_{ow} ... UK at 25°C
 Method of calculation or determination UK

5.04 Specify the soil-water partition coefficient, K_d UK at 25°C
 Soil type UK

5.05 Specify the organic carbon-water partition coefficient, K_{oc} UK at 25°C

5.06 Specify the Henry's Law Constant, H UK atm-m³/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor

Species

Test¹

UK
↓

UK
↓

UK
↓

¹Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	N/A	N/A
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

CBI

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
ECCOFORM F.P.H.	\$ 22.82
	N/A

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

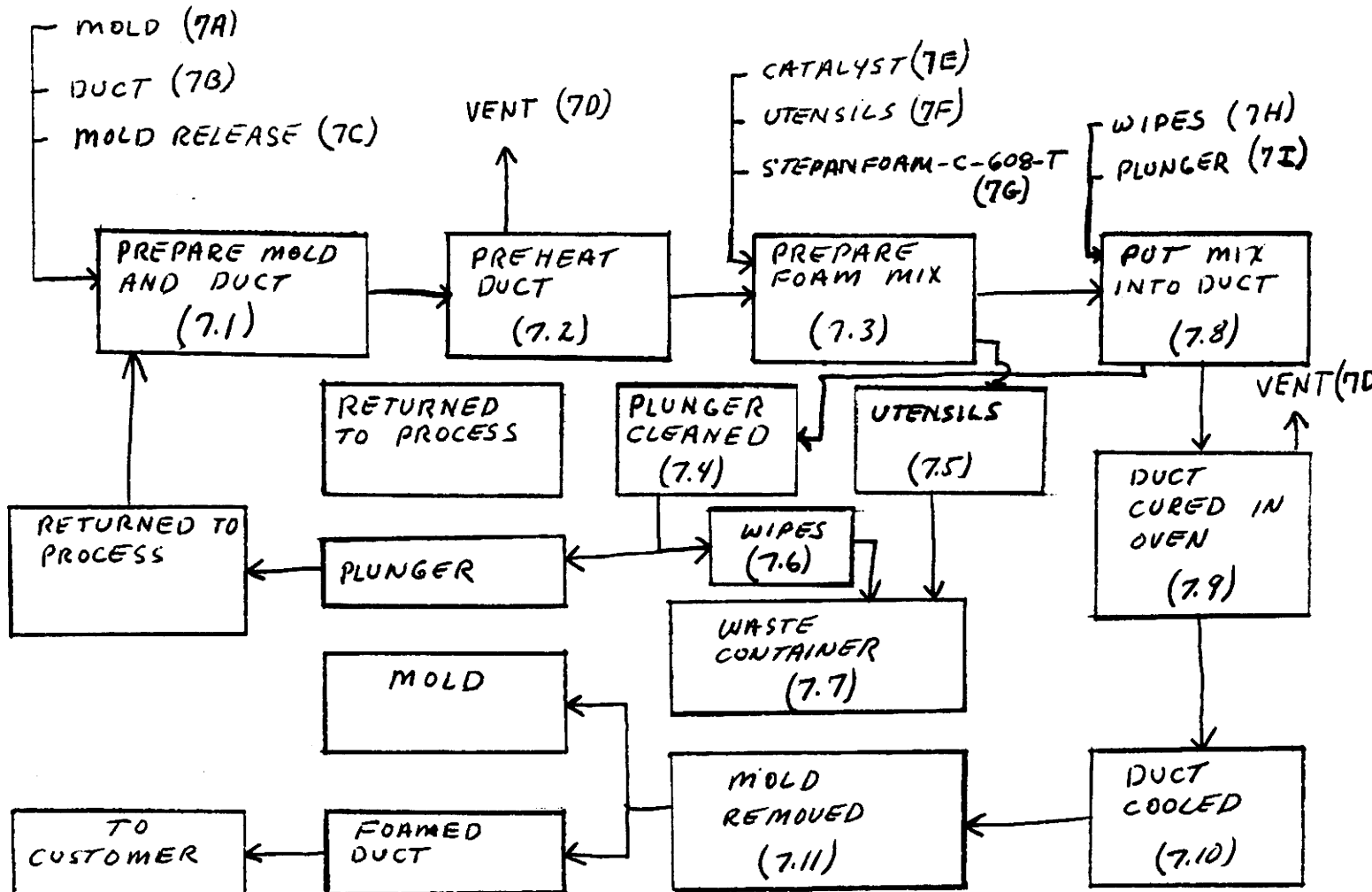
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type FOAM PRODUCTION



☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type N/A

☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type FOAM PRODUCTION

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7.1</u>	<u>MOLD</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>Fiberglass</u>
<u>7.2</u>	<u>OVEN</u>	<u>60-65</u>	<u>ATMOSPHERIC</u>	<u>STAINLESS STEEL</u>
<u>7.3</u>	<u>PAPER CUPS, SYRINGE BARRELL</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>PAPER, PLASTIC</u>
<u>7.4</u>	<u>WIPES</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>CLOTH</u>
<u>7.5</u>	<u>PAPER CUPS SYRINGE BARREL</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>PAPER, PLASTIC</u>
<u>7.6</u>	<u>WIPES</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>CLOTH</u>
<u>7.7</u>	<u>WASTE CAN</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>STAINLESS STEEL</u>
<u>7.8</u>	<u>WOODEN DOWEL SYRINGE BARREL</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>WOOD, PLASTIC</u>
<u>7.9</u>	<u>OVEN</u>	<u>87-93</u>	<u>ATMOSPHERIC</u>	<u>STAINLESS STEEL</u>
<u>7.10</u>	<u>OPEN BENCH</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>STEEL, WOOD</u>
<u>7.11</u>	<u>OPEN BENCH</u>	<u>AMBIENT</u>	<u>ATMOSPHERIC</u>	<u>STEEL, WOOD</u>

☐ Mark (X) this box if you attach a continuation sheet.

- 7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type FOAM PRODUCTION

Process Stream ID Code	Process Stream Description	Physical State ¹	Stream Flow (kg/yr)
<u>7A</u>	<u>MOLD TO SECURE DUCT</u>	<u>SO</u>	<u>N/A</u>
<u>7B</u>	<u>DUCT TO BE FILLED WITH FOAM</u>	<u>SO</u>	<u>N/A</u>
<u>7C</u>	<u>MOLD RELEASE AGENT</u>	<u>OL</u>	<u>7.47</u>
<u>7D</u>	<u>VENT TO OUTSIDE AIR</u>	<u>SO</u>	<u>UK</u>
<u>7E</u>	<u>CATALYST REACTANT</u>	<u>OL</u>	<u>128</u>
<u>7F</u>	<u>PAPER CUPS AND SYRINGE BARREL</u>	<u>SO</u>	<u>8.12</u>
<u>7G</u>	<u>STEPANFOAM-C-608-T</u>	<u>OL</u>	<u>171</u>
<u>7H</u>	<u>WIPES</u>	<u>SO</u>	<u>0.427</u>
<u>7I</u>	<u>WOODEN DOWEL PLUNGER</u>	<u>SO</u>	<u>N/A</u>

¹Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type FOAM PRODUCTION

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds ¹	Concentrations ^{2,3} (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>7A</u>	<u>NONE</u>	<u>N/A.</u>	<u>N/A.</u>	<u>N/A</u>
<u>7B</u>	<u>NONE</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>7C</u>	<u>PETROLEUM HYDROCARBON</u>	<u>100%</u>	<u>NONE</u>	<u>N/A</u>
<u>7D</u>	<u>NONE</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>7E</u>	<u>POLYOL MIX</u>	<u>100</u>	<u>NONE</u>	<u>N/A</u>
<u>7F</u>	<u>NONE</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>7G</u>	<u>TOLUENE-2,4-DIISOCYANATE</u>	<u>94%</u>	<u>POLYALK</u>	<u>6%</u>

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

¹ For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	N/A	N/A
2		
3		
4		
5		

²Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

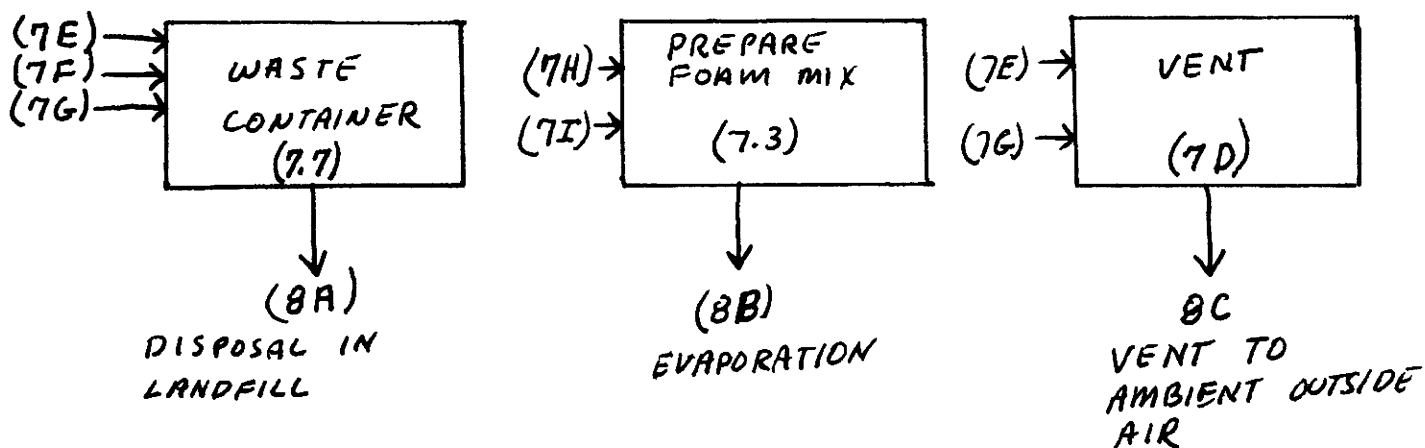
☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type FOAM PRODUCTION



☐ Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

☐ Process type FOAM PRODUCTION

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Type of Hazardous Waste ¹	Physical State of Residual ²	Known Compounds ³	Concentrations (% or ppm) ^{4,5,6}	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>8A</u>	<u>T</u>	<u>OL</u>	<u>TOLUENE-2,4-DIISOCYANATE</u>	<u>94%(UK)</u>	<u>POLYALL</u>	<u>UK</u>
		<u>GU</u>			<u>HCN</u>	<u>UK</u>
<u>8B</u>	<u>T</u>	<u>GC</u>	<u>TOLUENE-2,4-DIISOCYANATE</u>	<u>UK</u>	<u>POLYALL</u>	<u>UK</u>
		<u>GU</u>			<u>HCN</u>	<u>UK</u>
<u>8C</u>	<u>T</u>	<u>GC</u>	<u>TOLUENE-2,4-DIISOCYANATE</u>	<u>UK</u>	<u>POLYALL</u>	<u>UK</u>
		<u>GU</u>			<u>HCN</u>	<u>UK</u>

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

³For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	N/A	N/A
2		
3		
4		
5		

⁴Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

⁵Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> (\pm ug/l)
<u>1</u>	<u>N/A</u>	<u>N/A</u>
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		

☐ Mark (X) this box if you attach a continuation sheet.

CBI

FORM PRODUCTION

¹Use the codes provided in Exhibit 8-1 to designate the waste descriptions
²Use the codes provided in Exhibit 8-2 to designate the management methods

58

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1	N/A	N/A	N/A	N/A	N/A	N/A
2	↓	↓	↓	↓	↓	↓
3	↓	↓	↓	↓	↓	↓

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes N/A 1
 No N/A 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

The Residuals From This Process Are Not Incinerated

☐

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1	N/A	N/A
2	↓	↓
3	↓	↓

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes N/A 1
 No N/A 2

¹Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)
 E = Electrostatic precipitator
 O = Other (specify) N/A

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>Y</u>	<u>Y</u>	<u>1977</u> ①	<u>MINIMUM 30 YEARS</u> ②
Age at hire	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Work history of individual before employment at your facility	<u>N</u>	<u>N</u>	<u>N/A</u>	<u>N/A</u>
Sex	<u>Y</u>	<u>Y</u>	<u>1977</u> ①	<u>MINIMUM 30 YEARS</u> ②
Race	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Job titles	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Start date for each job title	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
End date for each job title	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Work area industrial hygiene monitoring data	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Personal employee monitoring data	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Employee medical history	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Employee smoking history	<u>N</u>	<u>N</u>	<u>N/A</u>	<u>N/A</u>
Accident history	<u>Y</u>	<u>Y</u>	<u>1977</u> ①	<u>MINIMUM 30 YEARS</u> ②
Retirement date	<u>Y</u>	<u>Y</u>	<u>1977</u> ①	<u>MINIMUM 30 YEARS</u> ②
Termination date	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Vital status of retirees	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>
Cause of death data	<u>Y</u>	<u>Y</u>	<u>"</u>	<u>"</u>

① Automated Records Kept Since 1977. Prior To That Data Are Kept on Hard Copies in Permanent Records.

② Personnel Records Are Kept In Permanent Records. Currently No Plan Exists To Purge These Records. SOP INDICATES TO KEEP FOR MINIMUM OF 30 YEARS

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	N/A	N/A	N/A
	Controlled Release			
	Open			
On-site use as reactant	Enclosed			
	Controlled Release			
	Open			
On-site use as nonreactant	Enclosed			
	Controlled Release			
	Open			
On-site preparation of products	Enclosed			
	Controlled Release			
	Open	165	7	231

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as reactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as nonreactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site preparation of products	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	<u>6</u>	<u>7</u>	<u>144</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

DO 411 (Processor)

B

DO 412 (Processor)

C

DO 621 (Co-Worker)

D

SUPERVISOR E102

E

MAINTENANCE 443B

F

DRIVERS

G

Hazardous Waste Operators

H

I

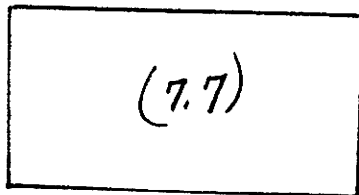
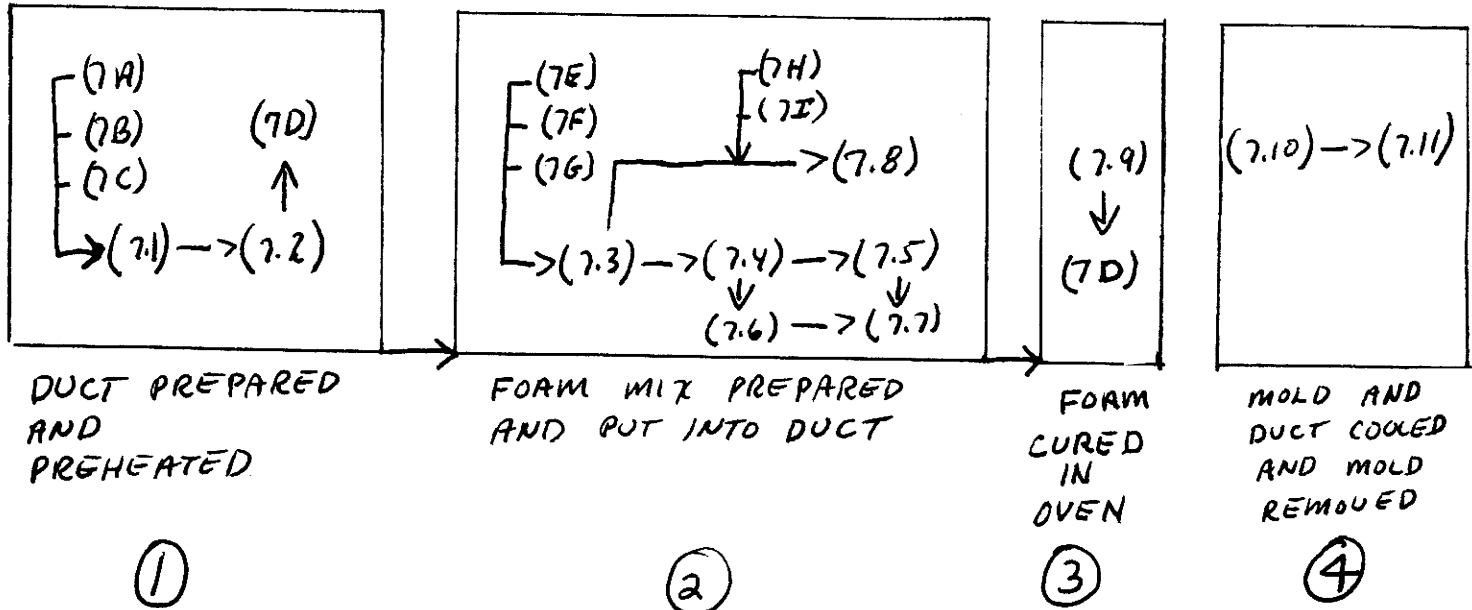
J

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type FOAM PRODUCTION



WASTE CAN PICKED UP AND TRANSPORTED TO DUMPSTERS TO GO TO LANDFILL

⑤

ALL WORK WITH THE LISTED SUBSTANCE IS CONDUCTED ON A SINGLE BENCH AND USING A SINGLE OVEN. DIFFERENT WORK FUNCTIONS ARE CONDUCTED AT THESE TWO STATIONS AND SO ARE DESCRIBED AS 4 SEPARATE WORK AREAS

①, ③, and ④ all TAKE PLACE ON THE SAME BENCH

① and ③ BOTH USE THE SAME OVEN

THE BENCH AND OVEN ARE BOTH LOCATED IN THE SAME GENERAL WORK AREA, AND ARE ABOUT 15 FEET APART.

☐ Mark (X) this box if you attach a continuation sheet.

- 9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type

FOAM PRODUCTION

Work Area ID

Description of Work Areas and Worker Activities

- | | |
|----|---|
| 1 | ENGINEERING BENCH, WELL VENTILATED, WORKERS RUB PARTIAL ON MOLD, ASSEMBLE MOLD AND DUCT, AND PUT ASSEMBLY IN OVEN |
| 2 | SAME BENCH AS ①. WORKERS WEIGH CATALYST AND C-608-T AND PUT INTO DUCT USING SYRINGE. THEN PUT ASSEMBLY IN OVEN |
| 3 | Assembly Cured in oven within a few feet of bench area |
| 4 | SAME BENCH AS ①. CURED DUCT IS PLACED ON BENCH TO COOL AND THEN MOLD IS REMOVED |
| 5 | WASTE CONTAINERS PICKED UP BY MAINTENANCE AND PUT IN DUMPSTERS. DUMPSTERS TRUCKED TO LARGE DUMPSTER FOR LANDFILL |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area ①

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>DOY11</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>DOY12</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>DO621</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>SUPERVISOR</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>MAINTENANCE</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)	SY = Sludge or slurry
GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)	AL = Aqueous liquid
SO = Solid	OL = Organic liquid
	IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less	D = Greater than 2 hours, but not exceeding 4 hours
B = Greater than 15 minutes, but not exceeding 1 hour	E = Greater than 4 hours, but not exceeding 8 hours
C = Greater than one hour, but not exceeding 2 hours	F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area (2)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>D0411</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0412</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0621</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>SUPERVISOR</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>MAINTENANCE</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area (3)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>D0411</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0412</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0621</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>Supervisor</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FORM PRODUCTION

Work area (4)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>D0411</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0412</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>B</u>	<u>94</u>
<u>D0621</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>SUPERVISOR</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>MAINTENANCE</u>	<u>1</u>	<u>1) DIRECT SKIN CONTACT</u> <u>2) BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question CBI and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area 5

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>MAINTENANCE</u>	<u>1</u>	<u>DIRECT SKIN CONTACT BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>TRUCK DRIVERS</u>	<u>1</u>	<u>DIRECT SKIN CONTACT BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>
<u>HAZARDOUS WASTE OPERATORS</u>	<u>1</u>	<u>DIRECT SKIN CONTACT BREATHING</u>	<u>GC, OL</u>	<u>A</u>	<u>94</u>

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensible at ambient temperature and pressure)	SY = Sludge or slurry
GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)	AL = Aqueous liquid
S0 = Solid	OL = Organic liquid
	IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less	D = Greater than 2 hours, but not exceeding 4 hours
B = Greater than 15 minutes, but not exceeding 1 hour	E = Greater than 4 hours, but not exceeding 8 hours
C = Greater than one hour, but not exceeding 2 hours	F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

CBI

Work area (1)

NOTE: WE BEGAN MONITORING FOR THE LISTED SUBSTANCE ONLY RECENTLY AND HAVE MONITORED ONLY THE WORKERS ASSOCIATED WITH THE MIXING OF THE FOAM MATERIALS DESCRIBED IN WORK AREA (2) of 9.04. THE RESULTS OF THIS MONITORING ARE NOT YET AVAILABLE. WHEN THE RESULTS ARE COMPLETE WE WILL FORWARD THE REQUESTED DATA. WHETHER ADDITIONAL MONITORING WORK WILL BE CONDUCTED IN THE OTHER WORK AREAS HAS NOT YET BEEN DETERMINED

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CBI

Work area 2

NOTE: WE BEGAN MONITORING FOR THE LISTED SUBSTANCE ONLY RECENTLY AND HAVE MONITORED ONLY THE WORKERS ASSOCIATED WITH THE MIXING OF THE FOAM MATERIALS DESCRIBED IN WORK AREA ② of 9.04. THE RESULTS OF THIS MONITORING ARE NOT YET AVAILABLE. WHEN THE RESULTS ARE COMPLETE WE WILL FORWARD THE REQUESTED DATA. WHETHER ADDITIONAL MONITORING WORK WILL BE CONDUCTED IN THE OTHER WORK AREAS HAS NOT YET BEEN DETERMINED

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CBI

Work area ③

NOTE: WE BEGAN MONITORING FOR THE LISTED SUBSTANCE ONLY RECENTLY AND HAVE MONITORED ONLY THE WORKERS ASSOCIATED WITH THE MIXING OF THE FOAM MATERIALS DESCRIBED IN WORK AREA (2) of 9.04. THE RESULTS OF THIS MONITORING ARE NOT YET AVAILABLE. WHEN THE RESULTS ARE COMPLETE WE WILL FORWARD THE REQUESTED DATA. WHETHER ADDITIONAL MONITORING WORK WILL BE CONDUCTED IN THE OTHER WORK AREAS HAS NOT YET BEEN DETERMINED

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CBI

[]

Work area

Labor Category

SEE NOTE

BELOW

NOTE:

[]

CBI

Work area 5

NOTE: WE BEGAN MONITORING FOR THE LISTED SUBSTANCE ONLY RECENTLY AND HAVE MONITORED ONLY THE WORKERS ASSOCIATED WITH THE MIXING OF THE FOAM MATERIALS DESCRIBED IN WORK AREA (2) of 9.04. THE RESULTS OF THIS MONITORING ARE NOT YET AVAILABLE. WHEN THE RESULTS ARE COMPLETE WE WILL FORWARD THE REQUESTED DATA. WHETHER ADDITIONAL MONITORING WORK WILL BE CONDUCTED IN THE OTHER WORK AREAS HAS NOT YET BEEN DETERMINED

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PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples ¹	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	②	NO SET SCHEDULE	2	A	Y	
General work area (air)	N/A	N/A	N/A	N/A	N/A	N/A
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)	NOTE: TO DATE WE HAVE MONITORED ONLY THE PERSONS INVOLVED IN MIXING THE FOAM MATERIALS AND ADDING THEM TO THE DUCT. THEREFORE ONLY WORK AREA ② IS DESCRIBED. WE HAVE NOT MONITORED OTHER WORKERS AT THE OTHER WORK AREAS.					
Other (specify)						

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

Sample Type	Sampling and Analytical Methodology
<u>FILTER CASSETTE</u>	<u>CONTINUOUS VACUUM PUMP / HPLC</u>

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

Equipment Type ¹	Detection Limit ²	Manufacturer	Averaging Time (hr)	Model Number
<u>D</u>	<u>A</u>	<u>DUPONT</u>	<u>0.329</u>	<u>ALPHA-1 PUMP</u>

¹Use the following codes to designate personal air monitoring equipment types:

A = Passive dosimeter

B = Detector tube

C = Charcoal filtration tube with pump

D = Other (specify) FILTER CASSETTE

Use the following codes to designate ambient air monitoring equipment types:

E = Stationary monitors located within work area

F = Stationary monitors located within facility

G = Stationary monitors located at plant boundary

H = Mobile monitoring equipment (specify) _____

I = Other (specify) _____

²Use the following codes to designate detection limit units:

A = ppm

B = Fibers/cubic centimeter (f/cc)

C = Micrograms/cubic meter (µ/m³)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency
(weekly, monthly, yearly, etc.)

N/A
↓

N/A
↓

☐ Mark (X) this box if you attach a continuation sheet.

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area ①

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	N	NA	NA	NA
General dilution	Y			
Other (specify)				
	N			
Vessel emission controls	N			
Mechanical loading or packaging equipment	N			
Other (specify)				
	N			

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9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FOAM PRODUCTION

Work area ②

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	N	N/A	N/A	N/A
General dilution	Y			
Other (specify)				
	N			
Vessel emission controls	N			
Mechanical loading or packaging equipment	N			
Other (specify)				
	N			

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PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area ③

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1977</u>	<u>N</u>	<u>N/A</u>
General dilution	<u>Y</u>	<u>NA</u>	<u>NA</u>	<u></u>
Other (specify)	<u>N</u>	<u></u>	<u></u>	<u></u>
Vessel emission controls	<u>N</u>	<u></u>	<u></u>	<u></u>
Mechanical loading or packaging equipment	<u>N</u>	<u></u>	<u></u>	<u></u>
Other (specify)	<u>N</u>	<u></u>	<u></u>	<u></u>

☐ Mark (X) this box if you attach a continuation sheet.

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type FORM PRODUCTION

Work area (4)

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	N	NA	NA	NA
General dilution	Y			
Other (specify)				
	N			
Vessel emission controls	N			
Mechanical loading or packaging equipment	N			
Other (specify)				
	N			

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PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area 5

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgrade</u>
Ventilation:				
Local exhaust	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
General dilution	<u>Y</u>	<u> </u>	<u> </u>	<u> </u>
Other (specify)	<u>N</u>	<u> </u>	<u> </u>	<u> </u>
	<u>N</u>	<u> </u>	<u> </u>	<u> </u>
Vessel emission controls	<u>N</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>
Mechanical loading or packaging equipment	<u>Y</u>	<u>1977</u>	<u>N</u>	<u>NA</u>
Other (specify)	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>↓</u>
	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>↓</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area ①

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>NONE</u>	<u>NONE</u>
<u>↓</u>	<u>↓</u>
<u>↓</u>	<u>↓</u>
<u>↓</u>	<u>↓</u>
<u>↓</u>	<u>↓</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area (2)

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>NONE</u>	<u>NONE</u>
↓	↓



☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area ③

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>NONE</u>	<u>NONE</u>
	



☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area (4)

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>NONE</u>	<u>NONE</u>
	



☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area (5)

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>NONE</u>	<u>NONE</u>
	

☐ Mark (X) this box if you attach a continuation sheet.

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

[] Process type FOAM PRODUCTION

Work area ①

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	N
Safety goggles/glasses	N
Face shields	N
Coveralls	N
Bib aprons	N
Chemical-resistant gloves	N
Other (specify)	N

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PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area (2)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>N</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	<u>N</u>
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area 3

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>N</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION

Work area (4)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>N</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
_____	<u>N</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

- 9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type FOAM PRODUCTION
Work area (5)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>N</u>
Face shields	<u>N</u>
Coveralls	<u>Y</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	<u>N</u>
_____	_____

HAZARDOUS MATERIALS OPERATORS

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type NA

Work Area	Respirator Type	Average Usage ¹	Fit Tested (Y/N)	Type of Fit Test ²	Frequency of Fit Tests (per year)
<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

¹Use the following codes to designate average usage:

A = Daily
 B = Weekly
 C = Monthly
 D = Once a year
 E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative
 QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type FOAM PRODUCTION

Work area ①

Process Specifications Are Provided Which Require The
Operator To wear Rubber Gloves and Safety Goggles
or face shield when mixing and pouring foam materials
Worker Training Programs

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type FOAM PRODUCTION

Work area ①

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping		<u>X</u>		
Vacuuming				
Water flushing of floors	<u>X</u>			
Other (specify)				

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type FOAM PRODUCTION

Work area ②

Process Specifications Are Provided Which Require The
Operator To wear Rubber Gloves and Safety Goggles
or face shield when mixing and pouring foam materials

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type FOAM PRODUCTION

Work area ②

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	_____	<u>X</u>	_____	_____
Vacuuming	_____	_____	_____	_____
Water flushing of floors	<u>X</u>	_____	_____	_____
Other (specify)	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type FOAM PRODUCTION

Work area (3)

Process Specifications Are Provided Which Require The
Operator To wear Rubber Gloves and Safety Goggles
or face shield when mixing and pouring foam materials

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type FOAM PRODUCTION

Work area (3)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	_____	<u>X</u>	_____	_____
Vacuuming	_____	_____	_____	_____
Water flushing of floors	<u>X</u>	_____	_____	_____
Other (specify)	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type FOAM PRODUCTION

Work area (4)

Process Specifications Are Provided Which Require The
Operator To wear Rubber Gloves and Safety Goggles
or face shield when mixing and pouring foam materials

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type FOAM PRODUCTION

Work area (4)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
Vacuuming	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Water flushing of floors	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Other (specify)	<u> </u>	<u> </u>	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type FOAM PRODUCTION

Work area (5)

TOPS ON ALL CONTAINERS AND DUMPSTERS. MINIMUM EXPOSURE TIMES. MOST WORKERS NEVER COME IN CONTACT WITH WASTE MATERIALS. HAZARDOUS MATERIALS PERSONS WHO TAKE SAMPLES TWICE PER YEAR ARE TRAINED IN HANDLING HAZARDOUS MATERIALS

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type FOAM PRODUCTION

Work area (5)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	_____	<u>X</u>	_____	_____
Vacuuming	_____	_____	_____	_____
Water flushing of floors	<u>X</u>	_____	_____	_____
Other (specify)	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes N/A 1
No N/A 2

Emergency exposure

Yes N/A 1
No N/A 2

If yes, where are copies of the plan maintained?

Routine exposure: N/A

Emergency exposure: N/A

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ①
No 2

If yes, where are copies of the plan maintained?

VARIOUS LOCATIONS THROUGHOUT THE
PLANT AND SPECIFICALLY IN OUR
EMERGENCY PLAN - 8 IN THE OFFICE OF
ENVIRONMENTAL COMPLIANCE, DEPT 441C

Has this plan been coordinated with state or local government response organizations?
Circle the appropriate response.

Yes ①
No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist N/A 1
Insurance carrier N/A 2
OSHA consultant N/A 3
Other (specify) N/A 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area ①
- Urban area ②
- Residential area ③
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- Within 1 mile of a school, university, hospital, or nursing home facility 8
- Within 1 mile of a non-navigable waterway ⑨
- Other (specify) _____ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 38 . 45 , 30 N.

Longitude 90 . 22 , 0 W.

UTM coordinates Zone 15 , Northing 2900 , Easting 9300

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation N/A inches/year

Predominant wind direction N/A

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater N/A meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity

Environmental Release

	Air	Water	Land
Manufacturing	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Importing	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Processing	<u>Y</u>	<u>N</u>	<u>N</u>
Otherwise used	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Product or residual storage	<u>Y</u>	<u>N</u>	<u>N</u>
Disposal	<u>N</u>	<u>N</u>	<u>Y</u>
Transport	<u>Y</u>	<u>N</u>	<u>N</u>

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI



Process type

FOAM PRODUCTION

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>CONTAINER</u> <u>Percent Efficiency</u>
<u>8A</u>	<u>LISTED SUBSTANCE STORED IN SEALED WASTE REMOVED TO LANDFILL IN TIMELY FASHION</u>	<u>UK</u>
<u>8B</u>	<u>LISTED SUBSTANCE STORED IN SEALED CONTAINERS</u>	<u>UK</u>
<u>8C</u>	<u>NONE</u>	<u>N/A</u>



Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type

FOAM PRODUCTION

Point Source
ID Code

Description of Emission Point Source

8A

UTENSILS USED TO MIX AND DELIVER C-608-T
ARE CONTAMINATED AND DISCARDED IN WASTE CONTAINER

8B

THIS IS SOURCE WHERE C-608-T IS WEIGHED AND
MIXED AND PUT INTO THE DUCT

8C

THIS IS THE VENT FROM THE OVEN TO OUTSIDE
AIR

☐ Mark (X) this box if you attach a continuation sheet.

CBI

[]

¹Height of attached or adjacent building²Width of attached or adjacent building

³Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code NA

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

NA

↓

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐

Process type

FOAM PRODUCTION

Percentage of time per year that the listed substance is exposed to this process type 2.19 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals ¹	0	0	0	0	0	0
Packed						
Mechanical						
Double mechanical ²						
Compressor seals ¹						
Flanges						
Valves						
Gas ³						
Liquid						
Pressure relief devices ⁴ (Gas or vapor only)						
Sample connections						
Gas						
Liquid	✓					
Open-ended lines ⁵ (e.g., purge, vent)						
Gas	1					
Liquid	0					

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐

Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³ Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

()

a. WE HAVE NO Pressure Relief Values in This Process

Number of
Pressure Relief Devices

Percent Chemical
in Vessel

c.

Control Device

d.
Estimated
Control Efficiency²

NA

[illegible]

¹ Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type FORM PRODUCTION

Equipment Type	Leak Detection Concentration (ppm or mg/m ³) Measured at Inches from Source	Detection Device ¹	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Pump seals	<u>WE HAVE NO FORMAL LEAK DETECTION PROGRAM</u>				
Packed	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Mechanical	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Double mechanical	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Compressor seals	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Flanges	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Valves	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Gas	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Pressure relief devices (gas or vapor only)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Sample connections	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Gas	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Open-ended lines	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Gas	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Liquid	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions -- Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type ¹	Floating Roof Seals ²	Composition of Stored Materials ³	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Volume (l)	Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶

None of these are applicable to us because we store only in the original 5 gallon cans.

¹Use the following codes to designate vessel type:

F = Fixed roof
CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof
EFR = External floating roof
P = Pressure vessel (indicate pressure rating)
H = Horizontal
U = Underground

²Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
MS2 = Shoe-mounted secondary
MS2R = Rim-mounted, secondary
LM1 = Liquid-mounted resilient filled seal, primary
LM2 = Rim-mounted shield
LMW = Weather shield
VM1 = Vapor mounted resilient filled seal, primary
VM2 = Rim-mounted secondary
VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

NO NON-ROUTINE RELEASES HAVE OCCURRED

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	N/A	N/A	N/A	N/A
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1	N/A	N/A	N/A	N/A	N/A
2					
3					
4					
5					
6					

☐ Mark (X) this box if you attach a continuation sheet.

APPENDIX I: List of Continuation Sheets

Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>N/A</u> % purity	<u>N/A</u> % purity	<u>94</u> % purity
Technical grade #2	<u>↓</u> % purity	<u>↓</u> % purity	<u>N/A</u> % purity
Technical grade #3	<u>↓</u> % purity	<u>↓</u> % purity	<u>N/A</u> % purity

NOTE: WE ONLY USE ONE PRODUCT FOR THIS PROCESS

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ... AFTER APPENDIX I (1)

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source (2)

NOTE: Please note that our most recent MSDS shows a different formulation than the one we worked to during the reporting year. THESE CAIR DATA ARE BASED ON THE 1988 MSDS

☒ Mark (X) this box if you attach a continuation sheet.

MSDS ATTACHMENTS

MC DONNELL DOUGLAS CORP
BUILDING 250
6951 N. HANLEY RD.
HAZELWOOD

MO 63042

ML 99948 00

MATERIAL SAFETY DATA SHEET

DATE: 04/07/88

CUST # 49935-701

P.O.# Y7M578

PAGE: 1

PRODUCT NUMBER: 718020

PRODUCT NAME: STEPANFOAM C-608-T

OSHA
INDUSTRIAL HYGIENE

18 APR 1988

02976
INSERT FOR
CAIR REPORT ON
STEPANFORM C-608-T
QUESTION 4.02.
J.W. Lanhorn
McDonnell Douglas
P.O. BOX 576
ST. LOUIS, MO 63166

*
* STEPAN COMPANY EMERGENCY INFORMATION *
* NORTHFIELD, IL. 60093 MEDICAL: 1-800-228-5635 *
* (312) 446-7500 CHEMTREC: 1-800-424-9300 *
*

* SECTION I: GENERAL INFORMATION *

PRODUCT NUMBER: 718020

PRODUCT NAME: STEPANFOAM C-608-T

PRODUCT CLASS: TOLUENE DIISOCYANATE.

PRECAUTIONS: POISON.

REFER TO BILL OF LADING OR CONTAINER LABEL FOR DOT OR OTHER
TRANSPORTATION HAZARD CLASSIFICATION, IF ANY.

* SECTION II: HAZARDOUS INGREDIENTS *

INGREDIENT (CAS #)

USHA PEL
(PPM)

ACGIH TLV
(PPM)

OTHER

TOLUENE-2,4-DIISOCYANATE (TDI) (C)
(584-84-9)
94%

0.02

0.005

NE = NOT ESTABLISHED.

NL = NOT LISTED.

(C) = IDENTIFIED AS A CARCINOGEN BY OSHA, IARC, OR NTP.

* SECTION III: PHYSICAL/CHEMICAL DATA *

(CONTINUED)

CAIR Report For TDI in 1988 Based On This MSDS Data

DATE: 04/07/88

CUST # 49935-701 P.O.# Y7M578

PAGE: 2

PRODUCT NUMBER: 718020

PRODUCT NAME: STEPANFOAM C-608-T

BOILING POINT:

OVER 200 DEG F. (93 DEG C.).

% VOLATILE BY WEIGHT:

NIL

EVAPORATION RATE: ESTIMATED SLOWER THAN ETHYL ETHER.

VAPOR DENSITY: ESTIMATED HEAVIER THAN AIR.

WEIGHT PER GALLON:

10.0 LBS.

* SECTION IV: FIRE AND EXPLOSION DATA *

FLASH POINT (SETA FLASH CLOSED CUP):

OVER 200 DEG F. (93 DEG C.).

EXPLOSIVE LIMITS:

LOWER:

1%

EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM, OR
WATER FOG. CLASS BC, ABC FIRE EXTINGUISHER.SPECIAL FIRE FIGHTING PROCEDURES: SELF-CONTAINED POSITIVE PRESSURE
BREATHING APPARATUS AND PROTECTIVE
CLOTHING SHOULD BE WORN IN FIGHT-
ING FIRES INVOLVING CHEMICALS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN.

* SECTION V: REACTIVITY DATA *

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

INCOMPATIBILITY (MATERIALS TO AVOID):

STRONG OXIDIZING AGENTS

WATER, ALCOHOLS, AMINES, ALKALIES, METAL COMPOUNDS (CATALYSTS).

HAZARDOUS DECOMPOSITION PRODUCTS:

CYANIDES AND AMMONIA MAY BE FORMED.

* SECTION VI: HEALTH HAZARD DATA *

EFFECTS OF OVEREXPOSURE/EMERGENCY AND FIRST AID PROCEDURES

EYES: CONTACT WITH EYES IS PAINFUL AND IRRITATING.

FLUSH EYES IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST
15 MINUTES.

(CONTINUED)

DATE: 04/07/88

CUST # 49935-701 P.O.# Y7M578

PAGE: 3

PRODUCT NUMBER: 718020

PRODUCT NAME: STEPANFOAM C-608-T

SKIN: PROLONGED OR REPEATED CONTACT WITH SKIN CAUSES IRRITATION.
WASH OFF SKIN WITH WATER. REMOVE CONTAMINATED CLOTHING AND
CLEAN BEFORE REUSE.

INHALATION: MIST CAUSED BY MANUFACTURING OPERATIONS IRRITATES
NASAL PASSAGES.

IF VAPORS OR MIST CAUSE IRRITATION OR DISTRESS,
REMOVE TO FRESH AIR.

GIVE OXYGEN OR APPLY ARTIFICIAL RESPIRATION,
IF NEEDED.

INGESTION: IF SWALLOWED, CONSULT A PHYSICIAN IMMEDIATELY.

CHRONIC EFFECTS AND MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:
CHRONIC EFFECTS AND MEDICAL CONDITIONS AGGRAVATED BY OVER-
EXPOSURE TO THIS PRODUCT HAVE NOT BEEN ESTABLISHED.
UNNECESSARY EXPOSURE TO THIS PRODUCT OR ANY CHEMICAL SHOULD
BE AVOIDED.

IF ANY SYMPTOMS PERSIST, CONSULT A PHYSICIAN.

IN A NATIONAL TOXICOLOGY PROGRAM (NTP) STUDY, TDI WAS CARCINO-
GENIC WHEN GIVEN ORALLY TO RATS AND MICE AT MAXIMUM TOLERATED
DOSES. TDI WAS NOT CARCINOGENIC TO RATS IN A TWO-YEAR INHALATION
STUDY.

SEE SECTION II FOR HAZARDOUS INGREDIENTS PRESENT IN THIS PRODUCT
AND THEIR CORRESPONDING THRESHOLD LIMIT VALUES.

FOR ADDITIONAL MEDICAL INFORMATION, CALL 1-800-228-5635

* SECTION VII: SPILL, LEAK, AND DISPOSAL PROCEDURES *

CONTAIN ALL SPILLS AND LEAKS TO PREVENT DISCHARGE INTO THE
ENVIRONMENT.

VENTILATE AREA.

SMALL SPILLS: SOAK UP WITH ABSORBANT, SHOVEL INTO WASTE CONTAINER,
FLUSH AREA WITH WATER.

LARGE SPILLS: RECOVER LIQUID FOR REPROCESSING OR DISPOSAL.

WASTE DISPOSAL: RECOVER MATERIAL OR DISPOSE (INCINERATION IS
PREFERRED) IN ACCORDANCE WITH ALL APPLICABLE FEDERAL,
STATE, AND LOCAL REGULATIONS. MATERIAL COLLECTED WITH
ABSORBANT MAY BE DISPOSED IN A PERMITTED LANDFILL IN
ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
EMPTY CONTAINER MAY RETAIN VAPOR OR PRODUCT RESIDUE.
OBSERVE ALL LABELED SAFEGUARDS UNTIL CONTAINER IS
CLEANED, RECONDITIONED, OR DESTROYED.

(CONTINUED)

DATE: 04/07/88

CUST # 49935-701

P.O.# Y7M57J

PAGE: 4

PRODUCT NUMBER: 718020

PRODUCT NAME: STEPANFOAM C-608-T

* SECTION VIII: PROTECTIVE MEASURES *

EYE PROTECTION: WEAR FULL FACE SHIELD OR GOGGLES WHEN HANDLING.

PROTECTIVE GLOVES: USE IMPERVIOUS GLOVES.

RESPIRATORY PROTECTION:

IF VAPORS ARE PRESENT, USE NIOSH OR MSHA APPROVED RESPIRATOR FOR ORGANIC VAPORS, AIR-LINE RESPIRATOR, OR A SELF-CONTAINED BREATHING APPARATUS.

VENTILATION:

USE VENTILATION ADEQUATE TO KEEP HAZARDOUS INGREDIENTS BELOW THEIR TLV (SEE SECTION II).

OTHER PROTECTIVE EQUIPMENT:

WEAR PROTECTIVE CLOTHING TO PREVENT REPEATED OR PROLONGED CONTACT.

EYE WASH STATION AND SAFETY SHOWER SHOULD BE NEAR WORK AREA.

* SECTION IX: SPECIAL PRECAUTIONS *

HANDLING AND STORAGE:

AVOID OVERHEATING OR FREEZING.

AVOID OPEN FIRE OR FLAME.

OTHER PRECAUTIONS:

SPILLED MATERIAL IS SLIPPERY. WASH THOROUGHLY AFTER HANDLING. IF INGESTED, CALL A PHYSICIAN.

DO NOT POUR INTO DRAINS, AS SOLIDS THAT FORM WILL PLUG SEWERS.
1% AMMONIA MAY BE USED TO NEUTRALIZE SPILLS.*****
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(R) REGISTERED TRADEMARK OR APPLICATION PENDING.

***** LAST REVISION DATE: 07/21/87 15:46:53 *****

MATERIAL SAFETY DATA SHEET

20 JUL 1989

DATE: 05/25/89

PAGE: 1

PRODUCT NUMBER: 188470

PRODUCT NAME: STEPANFOAM C-608-T (8847)

STEPAN COMPANY
NORTHFIELD, IL. 60093
(312) 446-7500

EMERGENCY INFORMATION
MEDICAL: 1-800-228-5635
CHEMTREC: 1-800-424-9300

SECTION I: GENERAL INFORMATION

PRODUCT NUMBER: 188470 PRODUCT NAME: STEPANFOAM C-608-T (8847)
PRODUCT CLASS: TOLUENE DIISOCYANATE.
PRECAUTIONS: POISON.
REFER TO BILL OF LADING OR CONTAINER LABEL FOR DOT OR OTHER
TRANSPORTATION HAZARD CLASSIFICATION, IF ANY.

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT (CAS #)	OSHA PEL (PPM)	ACGIH TLV (PPM)	OTHER
TOLUENE-2,4-DIISOCYANATE (TDI) (C) (584-84-9) 74%	0.005	0.005	SARA 313
TOLUENE-2,6-DIISOCYANATE (TDI) (C) (91-08-7) 18%	0.005	0.005	SARA 313

NE = NOT ESTABLISHED.

NL = NOT LISTED.

(C) = IDENTIFIED AS A CARCINOGEN BY OSHA, IARC, OR NTP.

SECTION III: PHYSICAL/CHEMICAL DATA

(CONTINUED)

MATERIAL SAFETY DATA SHEET

DATE: 05/25/89

PAGE: 2

PRODUCT NUMBER: 198470

PRODUCT NAME: STEPANFOAM C-608-T (8847)

BOILING POINT:

OVER 200 DEG F. (93 DEG C.).

% VOLATILE BY WEIGHT:

NIL

EVAPORATION RATE: ESTIMATED SLOWER THAN ETHYL ETHER.

VAPOR DENSITY: ESTIMATED HEAVIER THAN AIR.

WEIGHT PER GALLON:

10.0 LBS.

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT (SETA FLASH CLOSED CUP):

OVER 200 DEG F. (93 DEG C.).

EXPLOSIVE LIMITS:

LOWER:

1%

EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM, OR
WATER FOG. CLASS BC, ABC FIRE EXTINGUISHER.

SPECIAL FIRE FIGHTING PROCEDURES: SELF-CONTAINED POSITIVE PRESSURE
BREATHING APPARATUS AND PROTECTIVE
CLOTHING SHOULD BE WORN IN FIGHT-
ING FIRES INVOLVING CHEMICALS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN.

SECTION V: REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

INCOMPATIBILITY (MATERIALS TO AVOID):

STRONG OXIDIZING AGENTS

WATER, ALCOHOLS, AMINES, ALKALIES, METAL COMPOUNDS (CATALYSTS).

HAZARDOUS DECOMPOSITION PRODUCTS:

CYANIDES AND AMMONIA MAY BE FORMED.

SECTION VI: HEALTH HAZARD DATA

(CONTINUED)

MATERIAL SAFETY DATA SHEET

DATE: 05/25/89

PAGE: 3

PRODUCT NUMBER: 18B470

PRODUCT NAME: STEPANFOLAM C-608-T (8847)

EFFECTS OF OVEREXPOSURE/EMERGENCY AND FIRST AID PROCEDURES

EYES: CONTACT WITH EYES IS PAINFUL AND IRRITATING.
FLUSH EYES IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

SKIN: PROLONGED OR REPEATED CONTACT WITH SKIN CAUSES IRRITATION.
WASH OFF SKIN WITH WATER. REMOVE CONTAMINATED CLOTHING AND CLEAN BEFORE REUSE.

INHALATION: MIST CAUSED BY MANUFACTURING OPERATIONS IRRITATES NASAL PASSAGES.
IF VAPORS OR MIST CAUSE IRRITATION OR DISTRESS, REMOVE TO FRESH AIR.
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INGESTION: IF SWALLOWED, CONSULT A PHYSICIAN IMMEDIATELY.

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IN A NATIONAL TOXICOLOGY PROGRAM (NTP) STUDY, TDI WAS CARCINOGENIC WHEN GIVEN ORALLY TO RATS AND MICE AT MAXIMUM TOLERATED DOSES. TDI WAS NOT CARCINOGENIC TO RATS IN A TWO-YEAR INHALATION STUDY.

SEE SECTION II FOR HAZARDOUS INGREDIENTS PRESENT IN THIS PRODUCT AND THEIR CORRESPONDING THRESHOLD LIMIT VALUES.

FOR ADDITIONAL MEDICAL INFORMATION, CALL 1-800-228-5635

SECTION VII: SPILL, LEAK, AND DISPOSAL PROCEDURES

CONTAIN ALL SPILLS AND LEAKS TO PREVENT DISCHARGE INTO THE ENVIRONMENT.
VENTILATE AREA.

(CONTINUED)

MATERIAL SAFETY DATA SHEET

DATE: 05/25/89

PAGE: 4

PRODUCT NUMBER: 188470

PRODUCT NAME: STEPANFOAM C-608-T (8847)

SMALL SPILLS: SOAK UP WITH ABSORBANT, SHOVEL INTO WASTE CONTAINER,
FLUSH AREA WITH WATER.

LARGE SPILLS: RECOVER LIQUID FOR REPROCESSING OR DISPOSAL.

WASTE DISPOSAL: RECOVER MATERIAL OR DISPOSE (INCINERATION IS
PREFERRED) IN ACCORDANCE WITH ALL APPLICABLE FEDERAL,
STATE, AND LOCAL REGULATIONS. MATERIAL COLLECTED WITH
ABSORBANT MAY BE DISPOSED IN A PERMITTED LANDFILL IN
ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
EMPTY CONTAINER MAY RETAIN VAPOR OR PRODUCT RESIDUE.
OBSERVE ALL LABELED SAFEGUARDS UNTIL CONTAINER IS
CLEANED, RECONDITIONED, OR DESTROYED.

SECTION VIII: PROTECTIVE MEASURES

EYE PROTECTION: WEAR FULL FACE SHIELD OR GOGGLES WHEN HANDLING.

PROTECTIVE GLOVES: USE IMPERVIOUS GLOVES.

RESPIRATORY PROTECTION:

IF VAPORS ARE PRESENT, USE NIOSH OR MSHA APPROVED RESPIRATOR FOR
ORGANIC VAPORS, AIR-LINE RESPIRATOR, OR A SELF-CONTAINED
BREATHING APPARATUS.

VENTILATION:

USE VENTILATION ADEQUATE TO KEEP HAZARDOUS INGREDIENTS BELOW
THEIR TLV (SEE SECTION II).

OTHER PROTECTIVE EQUIPMENT:

WEAR PROTECTIVE CLOTHING TO PREVENT REPEATED OR PROLONGED
CONTACT.

EYE WASH STATION AND SAFETY SHOWER SHOULD BE NEAR WORK AREA.

SECTION IX: SPECIAL PRECAUTIONS

HANDLING AND STORAGE:

AVOID OVERHEATING OR FREEZING.

AVOID OPEN FIRE OR FLAME.

OTHER PRECAUTIONS:

SPILLED MATERIAL IS SLIPPERY. WASH THOROUGHLY AFTER HANDLING. IF
INGESTED, CALL A PHYSICIAN.

DO NOT POUR INTO DRAINS, AS SOLIDS THAT FORM WILL PLUG SEWERS.
(CONTINUED)

MATERIAL SAFETY DATA SHEET

DATE: 05/25/89

PAGE: 5

PRODUCT NUMBER: 188470

PRODUCT NAME: STEPANFOAM C-600-T (8847)

1% AMMONIA MAY BE USED TO NEUTRALIZE SPILLS.

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(R) REGISTERED TRADEMARK OR APPLICATION PENDING.

LAST REVISION DATE: 03/07/89

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4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes AFTER APPENDIX I (1)
 No 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[]

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	(5)
Store	1	2	(3)	4	5
Dispose	1	2	(3)	4	(5)
Transport	1	2	3	4	5

☒ Mark (X) this box if you attach a continuation sheet.

**PROCUREMENT & FABRICATION OF FOAMED-IN-PLACE
 ASSEMBLIES**

1. APPLICATION

1.1 This specification pertains to the procurement of and an acceptable process for the fabrication of foamed-in-place assemblies. The certification section deals with the mandatory requirements that must be fulfilled by all suppliers of foamed-in-place assemblies for usage at MCAIR. The process section pertains to the method of fabrication to be employed at MCAIR and may also be used by vendors provided that the certification section is complied with in full.

1.2 This specification is applicable when specified on Engineering drawings. Customer approval must be obtained for each application specified.

1.3 The materials and process of this specification shall not be used to encapsulate foreign objects such as rivets, nuts, bolts, etc., in any assembly.

1.4 This specification supersedes P.B. 4-31, P.B. 4-78, P.B. 4-81, P.B. 4-84, and P.B. 4-95.

1.5 This specification contains materials subject to the Age/Shelf Life Control requirements of P.S. 23600.

1.6 This Revision E supersedes and includes Amendment 1 to Revision D. As no other changes were made, revision bars are applicable to this paragraph only.

2. APPLICABLE DOCUMENTS

2.1 The following specifications or documents form a part of this specification to the extent specified herein.

P.S. 12030 - Alkaline Cleaning

P.S. 13202 - Chromic Acid Treatment of Aluminum Alloys

P.S. 23600 - Age/Shelf Life Control Requirements

MIL-C-5541 - Chemical Films for Aluminum and Aluminum Alloys

3. MATERIALS AND/OR SOLUTIONS

3.1 Stepanfoam, Series A, B, BH, C, D, E, G, P, and SX - Stepan Chemical Co., Northfield, IL. (Storage Life: Stepanfoam A, B, BH, C, D, and P - one year at R.T. Stepanfoam E, G, and SX - six months at R.T.).

3.2 Thermofoam 607 Type I - Adhesive Engineering, 1411 Industrial Road, San Carlos, CA. (Storage Life: As packaged, the separate components of Thermofoam 607, Type I are stable for about two weeks at room temperature. If it is to be kept for longer periods, components shall be refrigerated at 30°F or lower. At refrigerated conditions storage life will be approximately one year.)

3.3 Eccof foam F.P.H. - Emerson and Cuming Inc., 869 Washington Street, Canton, MA. (Storage Life: 6 months at R.T.)

3.4 Stafoam Series -302F, 305F, 315F, AA 1802 - American Latex Products Corporation, 3341 West El Segundo Blvd., Hawthorne, CA. (Storage Life: 3 months at R.T.)

3.5 Partall Paste No. 2 - Rexco, 1325 Warehouse Avenue, Costa Mesa, CA.

3.6 Partall Film No. 10 - Rexco, 1325 Warehouse Avenue, Costa Mesa, CA.

3.7 Epon 828 Resin - Shell Chemical Co., Chicago, IL. (Storage Life: 2 years at room temperature.)

3.8 Versamid 125 Resin - General Mills, Kankakee, IL. (Storage Life: 1 year at room temperature.)

3.9 Silver Print No. 21-2 - Interstate Supply Company, St. Louis, MO 63116

3.10 Tape, Lacing and Tying, Untreated Nylon, No. W806, 1/8" Neutral Color - Hemmway and Bartlett Mfg. Co.

3.11 No. 50 Grit Sanding Discs - Commercial.

3.12 Ground Walnut Wheels - Size 1220 and 3100 - Harmons Products Co., Stockton, MO, or equivalent.

3.13 Isopropyl Alcohol - Commercial.

3.14 Lacolene - R. J. Brown Co., St. Louis, MO.

3.15 Mozel No. 18 Solvent - Mozel Chemical Co., St. Louis, MO.

3.16 Acetone - Commercial.

3.17 Methyl - Ethyl-Ketone - Commercial.

3.18 Xylene - Commercial.

3.19 #590 or #582 Putty - Presstite Engineering Co., St. Louis, MO.

3.20 S122 Fluorocarbon Dry Release Agent Spray - Miller-Stevenson, Chicago, IL, or Camie 1000 Mold Release - Camie Chemical Co., St. Louis, MO.

3.21 DC 140 Sealant/Adhesive, Dow Corning Corp., Midland, MI. (Shelf Life: 3 months, store below 90°F.)

3.22 A-4094 Primer, Dow Corning Corp., Midland, MI. (Shelf Life: 6 months, store at 50°F.)

3.23 CPR 727 Series Rigid Urethane Foam, CPR Division, The Upjohn Company, 555 Alaska Avenue, Torrance, CA. (Material shall be stored at 70-90°F in unopened containers and shelf life is six months.)

3.24 Saran Wrap - Dow Chemical Co., Midland, MI.

3.25 CPR 700 Series Rigid Urethane Foam, CPR Division, The Upjohn Company, 555 Alaska Avenue, Torrance, CA. (Material shall be stored at 70 to 90°F in unopened containers and shelf life is six months.)

ISSUED
 4 JANUARY 1956
 REVISION E
 15 DECEMBER 1986

PROCUREMENT & FABRICATION OF FOAMED-IN-PLACE ASSEMBLIES

PROCESS SPECIFICATION

P.S. 14025
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 ST. LOUIS

3.26 CPR 21 Rigid Urethane Foam, CPR Division, The Upjohn Company, Torrance, CA OR Stathane ERP 821-10 Rigid Urethane Foam, Expanded Rubber and Plastics Corp., Gardena, CA. (Material shall be stored at 70 to 90°F in unopened containers and shelf life is six months.)

3.27 Paper and Synthetic Non-woven wipers Keybak Aerospace Wipers No. 877, Chicopee Mills, Inc.

3.28 Perma-Mold Release No. 2-27 - Cope Plastics, Inc., St. Louis, MO.

4. EQUIPMENT

4.1 Mixing Containers, Non-Waxed Paper, Cardboard or Steel - Commercial

4.2 Spatula for Mixing - Stainless Steel, Aluminum, or Wood (Tongue Depressor) - Commercial

4.3 Scale for Weighing (grams to nearest 0.1 gram)

4.4 Fume Hood or Well-Ventilated Area

4.5 Curing Oven - 400°F Max.

4.6 Restraining Jigs or Fixtures to Prevent Warping of Assembly During Foaming Operations

NOTE: Restraining plate which will contact the foam shall have .04" to .09" diameter vent holes on 1/2 inch centers, approximately. One vent hole shall be placed behind each spacer.

4.7 Positive pressure blasting equipment capable of operating with ground walnut shells. Must have pressure control, filter system and abrasive reclaimed system - Commercial

4.8 Cheesecloth - Commercial

4.9 Brushes for Applying Adhesive Primer and Mold Release Agent

4.10 Source of Clean, Dry, Oil-Free Compressed Air

4.11 Rubber Gloves

4.12 Heat Lamps and Sockets

4.13 Aluminum Foil

4.14 Suitable Temperature Measuring Device. Potentiometer and Suitable Thermocouples.

5. REQUIREMENTS

5.1 Individual components of assemblies and completed assemblies shall be thoroughly cleaned as required in the applicable paragraphs of this specification.

5.2 Chemical surface treatments such as anodize, Alodine, Iridite, shall not be performed after the addition of foam plastic except for brush type applications as stated in the applicable finish specification.

5.3 Where necessary, restraining fixtures shall be used to form the foam material and maintain close tolerances.

5.4 The completed foam-in-place assembly shall be homogeneous, of uniform density, properly bonded, thoroughly cured, not tacky to the touch and shall conform to the dimensional tolerances required by the applicable drawing.

5.5 Unless otherwise specified on the applicable drawing, all assemblies having applications of Stepanfoam Series A, B, C, D, BH, E shall be preheated prior to the addition of the foam and shall be postcured after the foam has set up. Assemblies having application of Stepanfoam P series foam do not require preheating of the assembly or postcuring of the foam. Assemblies having application of Stepanfoam G series foam require preheating of the cavity, but do not require postcuring.

5.6 A representative of the Material and Process Development Department shall be present at the pouring of the first production unit of any new part made at MCAIR.

5.7 Unless otherwise stated herein, the fabrication procedures for all parts shall be in accordance with Section 6.

5.8 Unless otherwise stated in Special Procedures, all exposed surfaces of foam shall be sealed per 6.7.

5.9 Paper and synthetic non-woven wipers shall not be used for cleaning plastic transparencies. However, Keybak No. 877 wipers may be used on all other plastics and fiberglass parts.

5.10 Unless specified otherwise on an Engineering document, assemblies which are required by their applicable Finish Specification to receive an organic paint finish may have foam applied to painted surface.

5.11 STORAGE LIFE RETEST

After specified shelf life has expired, material lots shall be visually inspected, sampled and tested.

5.11.1 There shall be no separation into layers, thickening, gelation, hardening or precipitation in either component.

5.11.2 The density of the cured foam shall be determined and shall meet the original requirements.

5.11.3 Material lots which comply with 5.11.1 and 5.11.2 shall be requalified for a length of time equal to the initial qualified storage life period. Material which does not comply shall be rejected.

5.11.4 Material stored for two years shall be discarded.

6. PROCEDURES

6.1 PREPARATION OF ASSEMBLIES PRIOR TO THE FOAMING OPERATION

6.1.1 All drilling, machining, welding, solution inspection for cracks and forming shall be completed prior to cleaning of the assembly for the foaming operation.

ISSUED
4 JANUARY 1956
REVISION E
15 DECEMBER 1986

PROCUREMENT & FABRICATION OF FOAMED-IN-PLACE ASSEMBLIES

PROCESS SPECIFICATION

P.S. 14025
PAGE 2 OF 16

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ST. LOUIS

6.1.2 Clean unpainted surfaces by the following procedure or the applicable procedure of P.S. 11308.

- (a) Vapor degrease the assembly.
- (b) Alkaline clean per P.S. 12030, Type I or in an alkaline cleaning solution approved by MCAIR Material and Process Development Department. Rinse in clean, running water.
- (c) Chromic acid dip per P.S. 13202, or any chemical treatment in accordance with MIL-C-5541 specification.
- (d) Rinse thoroughly in hot and cold running water.
- (e) Oven dry at 150-200°F for 15 minutes or until thoroughly dry.

6.1.3 Clean surfaces which are painted as follows:

- (a) Solvent clean with isopropyl alcohol, lacolene or xylene.
- (b) Scuff sand with 320 grit or finer sandpaper and blow or brush off sanding dust.

NOTE: Assemblies which have painted surfaces that are enclosed and are inaccessible need not be cleaned prior to foaming.

6.1.4 All plastic laminates shall be sanded thoroughly with 50 grit sand paper until the glossy surface is removed. Solvent wipe the sanded surfaces with clean MEK or MMS 401 solution and clean cheesecloth. Allow to air dry for 30 minutes. Plastic laminate assemblies shall have the interior surfaces lightly sanded with 50 grit sand paper and wipe with MEK when possible. If surfaces are not accessible, flush cavity with MEK or xylene and dry the cavity at 150°F to 200°F for 30 minutes. Do not touch cleaned surfaces with bare hands. After cleaning, handle only with clean white gloves. Wrap in wax-free kraft paper if not foamed immediately after cleaning.

6.1.5 The foam shall be poured into the cavity within seven days after the final cleaning operation. Care shall be taken to prevent contamination of the cavity by wrapping the assembly in wax-free kraft paper provided the foam is not to be added immediately following the final cleaning operation.

6.1.6 Close all holes from the outside of foam cavity except pouring and vent holes with Presstite 590 putty or masking tape.

6.1.7 Presstite 590 or 582 putty may be used to build up around pour holes to insure complete filling of the cavity which may be on an angle.

6.1.8 Mask off exterior surfaces of the assembly with tape where excess foam may come in contact to facilitate clean-up operations.

6.1.9 Install restraining fixtures when required.

6.1.10 If preheating of the cavity and/or postcuring of the foam is to be done with heat lamps, position heat lamps around cavity so that the entire cavity will be maintained at the required preheat and postcure temperatures.

6.2 PREHEATING OF CAVITIES

6.2.1 All cavities shall be preheated to 110-130°F for applications requiring Stepanfoam Series A, B, C, D, BH and E unless otherwise stated on the applicable drawing or in 6.8 - Special Procedures. Hold at this temperature 10-15 minutes before adding the foam. Generally heat lamps can be removed after the foaming operation starts. Applications of Series P Stepanfoam do not require preheating of the cavities. Preheat cavities to 140-150°F for Series G applications unless otherwise stated on the applicable drawing. For Stafoam Series foams the cavities shall not be preheated.

6.3 DETERMINING THE QUANTITIES OF R AND T COMPONENTS REQUIRED PER UNIT POUR

6.3.1 Obtain the volume of the cavity to be filled from the drawing. Convert volume to cubic feet if not expressed in this unit on drawing.

6.3.2 Obtain the density of the resultant foam from Table I or from the last two digits of the Nopcofoam designation.

EXAMPLE: Nopco foam A-210 has a resulting foam density of 10 pounds per cubic foot.

6.3.3 Calculate the theoretical desired quantity of foam material by multiplying the volume of the cavity by the density of the resulting foam.

EXAMPLE: Volume of cavity = 0.25 cu. ft. Using A-210 material, density = 10 lbs. per cu. ft. $(0.25) (10) = 2.50$ lbs. of formulation A-210

However, it is recommended that a 10% excess be used to allow for complete filling and a flush out of the cavity. Therefore, the quantity of the material required for excess is obtained by multiplying the theoretical amount by 10%.

EXAMPLE: $(2.50) (.10) = .25$ lbs. excess. Then - the total quantity for the unit pour is $(2.50) + (.25) = 2.75$ lbs.

From Table I obtain the proportions by weight of R and T components. Multiply these proportions by the total quantity of material required to determine the quantity of each constituent per unit pour.

EXAMPLE: A-210 consists of 55 parts A-210-R and 45 parts A-210-T

$(2.75) (.55) = 1.51$ lbs. R
 $(2.75) (.45) = 1.24$ lbs. T
 2.75 lbs. Total

6.4 MIXING OF FOAM MATERIAL COMPONENTS

6.4.1 Weigh out the calculated amounts of R and T components into separate containers. Avoid prolonged exposure of either material to the atmosphere as they tend to absorb water. If the T component has solidified or contains white murky particles, it should be heated in an oven at 100°F to 125°F until melted or the white particles have disappeared. Do not decant any top liquid from partial liquid and solidified matter. After completely liquefied, the T component shall be cooled to room temperature before using. When the sealant gun is to be used to inject the mixed foam material into the cavity, mix only enough material at one time to fill one cartridge.

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FOAM DESIGNATION	DENSITY (lbs. per cu. ft.)	RATIO BY WEIGHT OF COMPONENTS
A-625 Stepanfoam	25	55 parts R 45 parts T
A-620 "	20	55 parts R 45 parts T
A-216 "	16	55 parts R 45 parts T
A-213 "	13	55 parts R 45 parts T
A-210 "	10	55 parts R 45 parts T
A-208 "	8	54 parts R 46 parts T
A-206 "	6	53 parts R 47 parts T
A-603 "	3	43 parts R 57 parts T
B-614 "	14	55 parts R 45 parts T
B-610 "	10	55 parts R 45 parts T
B-607 "	7	53 parts R 47 parts T
B-402 "	2	53 parts R 47 parts T
C-605 "	5	54 parts R 46 parts T
C-208 "	8	60 parts R 40 parts T
C-610 "	10	60 parts R 40 parts T
C-620 "	20	58 parts R 42 parts T
C-614 "	14	60 parts R 40 parts T
C-608 "	8	58 parts R 42 parts T
D-612 "	12	42 parts R 27 parts S-31 parts T
BH-614 "	14	50 parts R 50 parts T
BH-610 "	10	49 parts R 51 parts T
G-502 "	2	30 parts R 70 parts T
G-504 "	4	35 parts R 65 parts T
G-506 "	6	38 parts R 62 parts T
P-502 "	2	93.3 parts T 6.7 parts C
P-506 "	6	86.6 parts T 13.4 parts C

FOAM DESIGNATION	DENSITY (lbs. per cu. ft.)	RATIO BY WEIGHT OF COMPONENTS
E-302 Stepanfoam		2 32 parts R 68 parts T
Eccofoam FPH 12-2H	2 to 3	39 parts Catalyst 61 parts Resin
Eccofoam FPH 12-4H	4 to 5	43 parts Catalyst 57 parts Resin
Eccofoam FPH 12-6H	6 to 10	43 parts Catalyst 57 parts Resin
Eccofoam FPH 12-10H	10 to 14	46 parts Catalyst 54 parts Resin
Thermofoam 607 Type I	---	32 parts B 68 parts A
Stafoam 302F	2	Use Mix Ratio Specified on can
Stafoam 305F	5	"
Stafoam 315F	15	"
Stafoam AA 1802	2	"
CPR 21-10 or Stathane ERP 821-10	10	65 parts A 35 parts B
CPR 700-25	25	63.2 parts A 36.8 parts B
CPR 700-40	40	62.9 parts A 37.1 parts B
CPR 727-3	2	28.8 parts R 71.2 parts T
CPR 727-4	4	30.5 parts R 69.5 parts T
CPR 727-6	6	31.6 parts R 68.4 parts T
CPR 727-8	8	32.2 parts R 67.8 parts T
CPR 727-15	15	35.6 parts R 64.4 parts T
CPR 727-25	25	36.2 parts R 63.8 parts T
CPR 727-30	30	36.4 parts R 63.6 parts T
CPR 727-5	5	31.0 parts R 69.0 parts T
Stepanfoam SX 129	2.5 - 3.0*	97.3 parts SX 129-T 2.2 parts SX 129-C 0.5 parts SX 129-D

*See 7.2.4.1 for exceptions.

NOTE: The proportions by weight listed in this table shall serve as a guide. For exact proportions those listed on the containers for the specific batch shall be used in calculations and formulations.

TABLE I - FOAM DENSITY AND RATIO OF COMPONENTS

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6.4.1.1 For Stepanfoam C-608 only the container of R component may be warmed in an oven at 120 \pm 10°F for 10-15 minutes prior to mixing.

6.4.2 Pour the R component into the container from which the pour will be made. Stir thoroughly with a stainless steel, aluminum, or wood spatula (tongue depressor) (4.2). Complete transfer of each component is required.

6.4.3 Add the T component to the R component. Stir thoroughly with a stainless steel, aluminum, or wood spatula (tongue depressor) until a homogeneous mass is obtained. Complete transfer of the T component is required.

6.4.3.1 In addition to hand mixing, the material can be mixed on automatic metering, mixing, dispensing equipment or mechanically mixed using a propeller agitator and an air motor.

6.4.4 Mixing should be done under a fume hood or in a well ventilated area.

6.4.5 The operator shall wear rubber gloves and shall wear safety goggles or face shield when mixing and pouring the foam materials.

6.4.6 When the sealant gun is to be used to inject the mixed foam material into the cavity, immediately pour the thoroughly mixed foam material into the cartridge of the gun, making certain that the polyethylene piston has been inserted into the bottom of the cartridge before adding the mixture.

6.4.7 Assemble the gun immediately. Only use the flexible vinyl tubing when the pour hole is inaccessible without it.

6.4.8 Mix Eccofoam FPH as follows:

6.4.8.1 Warm Eccofoam FPH resin to 90°F to improve flowability. Maintain and use catalyst at room temperature.

6.4.8.2 Weigh out the required amount of Eccofoam FPH resin and catalyst per Table I in separate containers.

6.4.8.3 Add the catalyst to the Eccofoam FPH resin and mix in rapidly. Mixing by hand is possible but mechanical mixing is preferred. Limit mixing time to 30 seconds. Pour the mixed material into the cavity or mold which has been preheated to 100-120°F.

6.4.8.4 Foaming will begin shortly after the batch is poured and will usually be complete within a few minutes. Allow the foam to cure at room temperature for 3 hours.

6.4.9 Mix Thermofoam 607 Type I as follows:

6.4.9.1 Part "A" and part "B" shall be mixed in the ratio of 32 parts of part "B" to 68 parts of part "A". Before mixing, containers should be at room temperature. Part "A" must first be thoroughly stirred by a mechanical mixer before part "B" is added. After pouring part "B" into part "A", the two parts should be thoroughly mixed. A slow speed mechanical mixer may be used if desired, but hand mixing with a spatula or putty knife for about five minutes is usually adequate.

6.4.9.2 Pour the mixed material into the mold or assembly, put in oven, and observe the following cure cycle.

(a) Heat to 250°F at a heating rate of 3°F - 6°F per minute then,

(b) Heat to 335°F \pm 10°F and hold 1/2 hour.

NOTE: Heating rate from 250°F to 335°F is not critical.

6.4.9.3 The charge of liquid Thermofoam Type I required is 35-40 percent of the volume to be filled with foam.

6.4.10 Mix Stafoam Series foam as follows:

6.4.10.1 All components shall be maintained at 60-70°F before containers are opened and the contents mixed.

6.4.10.2 Weight and mix components per instructions on the can. Mix manually or mechanically for 25 to 35 seconds. Pour the mixed material into the room temperature cavity immediately.

6.4.10.3 Cure foam in the mold for 2 hours at 150 \pm 25°F/- 10°F after foam has completed its rise.

6.4.11 Mix CPR 727 Series foam per 6.4.1 through 6.4.7.

6.4.12 Mix CPR 700 Series foam per 6.4.1 through 6.4.7.

6.5 FILLING THE CAVITY

6.5.1 Unless otherwise specified in 6.8 for applications of all Series except P and G and Thermofoam 607, the mold or assembly containing the cavity to be filled shall be preheated to a temperature of 110°F - 130°F. No preheat is required for Series P applications. Preheat to 140°F - 150°F for Series G.

6.5.2 Pour the mix for a low density foam (5 lbs. per cu. ft. or less) as soon as uniformity is obtained.

6.5.3 Pour the mix for a high density foam (6 lbs. per cu. ft. or more) after a lowering of the viscosity due to the heat of reaction is observed. When a metal container is used for mixing and pouring, the container will become slightly warm to the hand when the heat of reaction has sufficiently progressed to warrant pouring.

6.5.4 Care should be taken to pour the mixture into the cavity before foaming action begins. Pour the foam so that it may reach the bottom of the cavity without running down the sides of the cavity where possible.

6.5.5 If simultaneous pouring of the two or three batches is not possible, it is permitted to pour one after the other provided the preceding batch has been allowed to set (remain for a few minutes after hardening) before pouring the next batch. Good bond should result between the material already set and that newly poured.

6.5.6 When the sealant gun is being used, the mixed foam material shall be immediately injected into the cavity after the gun has been assembled. If the volume of the cavity is such that it requires several injections, a time interval of at least five minutes shall elapse between injections.

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6.5.7 Clean all non-disposable containers and mixing equipment with acetone, lacquer thinner, or methyl ethyl ketone as soon as possible after using. Clean the gun components immediately after using. Do not place portion of gun with trigger mechanism in cleaner solution.

6.6 POSTCURING THE FOAM MATERIAL

6.6.1 Postcuring Series A and B foam materials shall be done as follows after the foam has set up.

6.6.1.1 Obtain the maximum temperature of exposure for continuous operation from the applicable drawing. The postcuring temperature is 25°F to 50°F above this temperature. However, the minimum postcuring temperature shall not be less than 175°F.

6.6.1.2 Place the assembly or mold in the oven set at the postcuring temperature. Postcuring may also be accomplished by using heat lamps so positioned to heat the entire cavity to the required temperature. Measure the temperature with a surface pyrometer or equivalent. Allow the assembly to heat to the postcuring temperature. Hold at this temperature for two to four hours depending on the thickness of the foam. Remove from heat and allow to cool to room temperature.

6.6.2 Postcuring Series C foam materials shall be done as follows after the foam has set up.

6.6.2.1 Place the assembly or mold in the oven maintained at a temperature of 190°F - 210°F. Postcuring may also be accomplished by using heat lamps so positioned to heat the entire cavity to the required temperature. A surface pyrometer or other temperature measuring apparatus to control the temperature is required. Allow the assembly to heat to the postcuring temperature. Hold at 190°F - 210°F for two hours. Remove from heat and allow assembly to cool to room temperature.

6.6.3 Series D foams shall be postcured as follows:

6.6.3.1 The assemblies shall be heated to 150°F - 200°F after the pouring operations have been completed and the foam has set up and held at this temperature for two to four hours depending on the thickness of the foam. Allow to cool to room temperature.

6.6.4 Series E foams shall be postcured. Cure at room temperature for one hour before removing from the fixture.

6.6.5 Postcuring Series BH foams shall be done as follows after the foam has set up.

6.6.5.1 Place the assembly or mold in the oven set at 350°F ± 10°F. Postcuring may also be accomplished by using heat lamps so positioned to heat the entire cavity to the required temperature. The use of a surface pyrometer or equivalent to control the temperature is required. Allow the assembly to heat to the postcuring temperature. Hold at 350°F ± 10°F for 3 hours ± 15 minutes. Remove from the heat and allow the assembly to cool to room temperature.

6.6.5.2 After the assembly has cooled to room temperature, remove the assembly from the mold or restraining fixtures and remove excess foam material. Care shall be taken so as not to injure the bond between the foam and the exterior facings.

6.6.6 Series P and G foams shall be cured at room temperature for 12 hours.

6.6.7 Postcuring of Series Eccofoam FPH foams shall be done as follows after the foam has set up.

6.6.7.1 Postcure Eccofoam FPH series foams after the foam has set at room temperature by placing the entire assembly including restraining fixtures in an oven at 300°F ± 10°F for 3 hours ± 10 minutes.

NOTE: After acceptance of the part or assembly by the Inspection Department, perform any additional finishing of the exposed foam material as required by the applicable drawing and finish specification.

6.6.8 Postcuring of CPR 727 Series foam shall be done as follows after foam has set up.

6.6.8.1 Postcure CPR 727 Series foams after the foam has set at room temperature by placing the entire assembly including restraining fixtures in an oven at 275 to 350°F for 4 to 8 hours.

6.6.9 Postcuring of CPR 700 Series foam shall be done as follows after foam has set at room temperature for at least 15 minutes.

6.6.9.1 Postcure the CPR 700 Series foams by placing the entire assembly including the restraining fixture in an oven at 250°F ± 10°F for 2 hours ± 10 minutes.

6.7 PROCEDURE FOR SEALING EXPOSED FOAM SURFACES

6.7.1 Apply masking tape around periphery of part adjacent to the exposed foam area.

6.7.2 Prepare sealant compound by thoroughly mixing 70 parts by weight of Epon 828 and 30 parts by weight of Versamid 125. Apply one uniform brush coat of the sealant compound to the foam surface and the exposed edge of the skin. Cure at room temperature for 12 hours or 175°F - 185°F for 30 - 45 minutes in level position, (so that sealant does not run off the part). Allow to cool to room temperature.

6.8 SPECIAL PROCEDURES

6.8.1 Model 133 Low Level Commutator Panel Assemblies

6.8.1.1 Clean interior surfaces of chassis by brush application of Moxel 18 solvent. Air dry for a minimum of 15 minutes. Do not use compressed air. Avoid contamination of cleaned surfaces with bare hands.

6.8.1.2 Apply Partall Paste No. 2 to all surfaces of the restraining fixture and rubber stoppers which will contact the foam.

6.8.1.3 Apply two coats Partall Film No. 10 over the Partall Paste No. 2 allowing 10 minutes air dry between coats.

6.8.1.4 Assemble the panel and inserts into the restraining fixture. Tighten nuts by hand only. Make sure panel is seated completely into the fixture. Make sure vent holes are open.

6.8.1.5 Attach thermocouple to surface of fixture. Preheat panel and fixture to 95°F - 100°F in forced air oven for a minimum of 10 minutes after reaching preheat temperature.

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